

FIG. 1

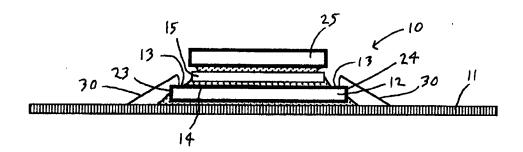
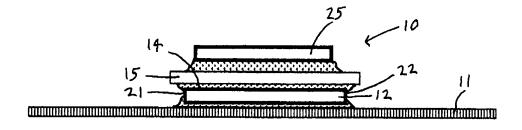


FIG. 2



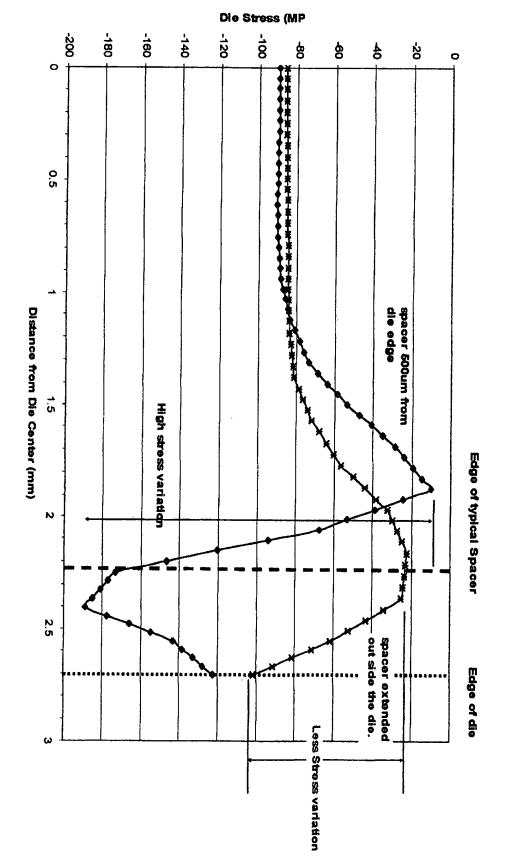


FIG.4

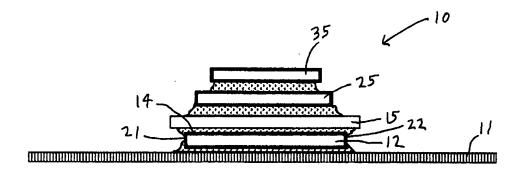


FIG. 5

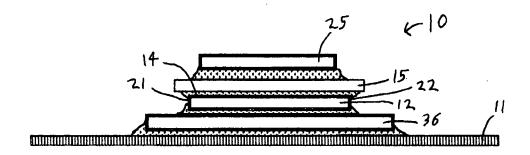
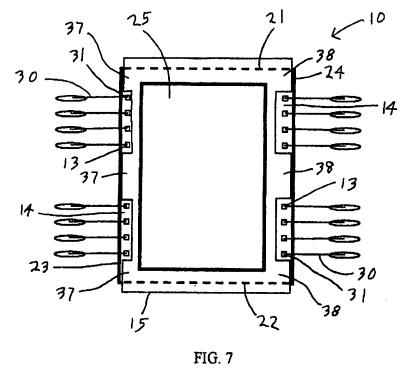


FIG. 6



securing a first die to a substrate, the first die including active circuitry on an upper surface;

54 -

covering the active circuitry on the upper surface of the first die with a spacer that extends from a first side of the first die to an opposing second side of the first die, the spacer extending near a third side of the first die and an opposing fourth side of the first die such that the active circuitry is exposed near the third and fourth sides of the first die

- covering the active circuitry where at least one section of the spacer extends
  to the third side of the first die such that only a portion of the active circuitry
  is exposed near the third side of the first die
- covering the active circuitry where at least one section of the spacer extends to the fourth side of the first die such that only a portion of the active circuitry is exposed near the fourth side of the first die
- covering the active circuitry such that the spacer is about 1mm away from the third and fourth sides of the first die
- attaching the spacer to the active circuitry with an adhesive
- covering a portion of a flash memory array on the first die with the spacer

56

stacking a second die onto the spacer and the first die

- securing the second die to the spacer with an adhesive

58

stacking at least one additional die onto the second die

60

securing at least one additional die between the first die and the substrate

62

bonding wires to pads that are part of the exposed active circuitry near the third and fourth sides of the first die

